

REMARKS

Claims 1-12 and 14-20 stand rejected. Claims 4, 5, 7, 11, 15, and 19 have been cancelled. Claims 1, 6, 8-10, 12, 14, 16, 17, and 20 have been amended. Claims 21-28 have been added. No new matter has been added by these amendments. After the forgoing amendments, claims 1-3, 6, 8-10, 12, 14, 16-18, and 20-28 will be pending.

Rejections under 35 U.S.C. 112, second paragraph:

Claims 1-3, 6, 8-10, 12, 14, 16-18, and 20 stand rejected under 35 U.S.C 112, second paragraph as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the office action states that “it is impossible for the polymer mesh to be in between a single outer layer” (page 2, para. 3). Applicant has amended independent claims 1 and 16 to recite a tube with multi-layer construction including one or more sub-layers wherein each sub-layer comprises a mesh that is bonded on one side to the paper layer via an intermediate polyethylene or polypropylene layer.

Based on the forgoing amendments, applicant respectfully requests withdrawal of the rejection under 35 U.S.C. 112.

Rejections under 35 U.S.C. 102(b):

Independent claims 1 and 16 stand rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent Number 6,460,575 (DeMeyer). Applicant submits that DeMeyer fails to teach a tube having a paper layer as claimed in amended claims 1 and 16. Instead, DeMeyer teaches the use of “thermally manipulated polymeric material” (col. 3, line 26) combined with a textile reinforcement material (col. 3, lines 1-2). In this way, DeMeyer fails to disclose the element of a paper layer claimed in claims 1 and 16.

Applicant further submits that DeMeyer fails to teach a tube with one or more layers that are spirally wound into the tube. Instead, DeMeyer discloses a thermoplastic or thermosetting material pipe having an innermost extruded polymer material wall onto which is wrapped around a reinforcing textile onto which, in turn, is extruded an outermost polymeric wall. (col. 11, line 14 – col. 12, line 63; Figs. 3 and 4A-4H).

In this way, the tube taught by DeMeyer is quite different in structure from the present invention. The tube taught by DeMeyer has distinct inner and outer walls 110 and 130 that

sandwich a reinforcing mesh 120. The inner wall 110, outer wall 130, and reinforcing mesh 120 of DeMeyer are homogeneous along the axis of the tube because they are formed through extrusion rather than spiral winding. In contrast the spirally wound tube claimed in the present invention has boundary lines between successive wound-on layers along the axis of the tube that are inherently formed by the spiral winding process.

New claim 24 is similar to claims 1 and 16 in scope in that it also claims a spiral-wound tube. For this reason, applicant respectfully submits that DeMeyer fails to teach all of the limitations of independent claims 1, 16, and 24 (8, 9, 12 and 25-28 which ultimately depend from one of claims 1, 16, and 24).

Rejections under 35 U.S.C. 103(a):

Independent claims 1 and 16 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number 5,328,142 (Weekers) in view of United States Patent Number 6,295,782 (Fyfe). Applicant submits that neither Weekers nor Fyfe alone or in combination teach or suggest a mesh bonded to a layer by an intermediate layer of polyethylene or polypropylene. As a preliminary matter, the Office Action admits that Weekers does not teach a sub-layer of woven polymer mesh bonded to other layers (page 6, para. 15), but asserts that Fyfe does teach such a structure. Applicant respectfully disagrees, and asserts that Fyfe also does not teach such a structure.

In that regard, Fyfe instead teaches fabric layers that are “impregnated with resin in order to function properly.” (col. 5, lines 26-27; col. 8, lines 25-26). Fabric layers that are impregnated with resin are substantially different from mesh material bonded to an outer layer as the present invention claims. When fabric is “impregnated” with resin, the resin fills in around the fibers to create a reinforced structure using a relatively large volume of resin. In contrast, the bonding claimed in the present invention uses an “intermediate layer” of polyethylene or polypropylene. In this way, the polyethylene or polypropylene acts as a film when used to bond rather than infill material as taught by Fyfe. Therefore, neither Fyfe nor Weekers alone or in combination teach a woven polymer mesh sub-layer bonded to a first side of a layer as claimed in claims 1 and 16. Because claim 24 also claims a woven polymer mesh sub-layer that is bonded to a first side of a layer, applicant respectfully submits that independent claims 1, 16, and 24 (and 2, 3, 6, 8-10, 12, 14, 17, 18, 20-23, and 25-28 which ultimately depend from one of claims 1, 16, and 24) are patentable over the prior art.

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For all of the forgoing reasons, applicant respectfully submits that independent claims 1, 16, and 24 (and 2, 3, 6, 8-10, 12, 14, 17, 18, 20-23, and 25-28 which ultimately depend from one of claims 1, 16, and 24) are in condition for allowance. If the Examiner determines that a telephone conference would further the prosecution of this case, she is invited to telephone the undersigned at her convenience.

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